

COLORADO RIVER ACTION PLAN: MAINSTEM

35

	ACTIVITY	WHO	STATUS	FY 04 10/03-9/04	FY 05 10/04-9/05	FY 06 10/05-9/06	FY 07 10/06-9/07	FY 08 10/07-9/08	FY 09 10/08-9/09	OUT- YEARS
I.	PROVIDE AND PROTECT INSTREAM FLOWS (HABITAT MANAGEMENT)									
I.A.	Colorado River above Gunnison River									
>*	I.A.1. Develop, issue and implement PBO.	FWS	Complete	USFWS 1999b.						
	I.A.2. Initially identify year-round flows needed for recovery.									
	I.A.2.a. Rifle to Roller Dam.	FWS-FR	Complete	Osmundson 2001.						
	I.A.2.b. Roller Dam to 15-Mile Reach.	FWS-FR	Complete	Osmundson 2001.						
	I.A.2.c. 15-Mile Reach.	FWS-FR	Complete	Osmundson and Kaeding 1991.						
	I.A.3. Provide a depletion accounting report as outlined in the 15-Mile Reach PBO.									
	I.A.3.a. Collect data.	CWCB/FWS-ES/BR		X	X					X
	I.A.3.b. Develop consumptive use and losses report with CRDSS model to verify level of depletions.	CWCB				12/05				
	I.A.3.c. Calculate new depletions every 5 years (2011, 2016, etc).	CWCB								X
	I.A.4. Evaluate need for instream flow water rights.									
	I.A.4.a. Rifle to Roller Dam (Dependent on initial flow recommendations).									
	I.A.4.a.(1) Assess legal and physical availability of water.	CWCB	Complete	Colorado completed work on a water availability study in early 1995 & the work was used as the basis of the allocation of compact water between the five subbasins.						
	I.A.4.a.(2) Assess compact considerations.	CWCB	Complete	Colorado completed work on a water availability study in early 1995 & the work was used as the basis of the allocation of compact water between the five subbasins.						
	I.A.4.a.(3) Five-year periodic review of progress under the PBO to determine if instream flow filings are necessary.	CWCB/FWS		X						X
	I.A.4.a.(3)(a) If necessary, evaluate how identified flows will be legally protected.	CWCB		X						X
	I.A.4.b. Roller Dam to 15-Mile Reach (Dependent on initial flow recommendations).									
	I.A.4.b.(1) Assess legal and physical availability of water.	CWCB	Complete	Colorado completed work on a water availability study in early 1995 & the work was used as the basis of the allocation of compact water between the five subbasins.						
	I.A.4.b.(2) Assess compact considerations.	CWCB	Complete	Colorado completed work on a water availability study in early 1995 & the work was used as the basis of the allocation of compact water between the five subbasins.						
	I.A.4.b.(3) Five-year periodic review of progress under the PBO to determine if instream flow filings are necessary.	CWCB/FWS		X						X
	I.A.4.b.(4) If necessary, evaluate how identified flows will be legally protected.	CWCB		X						X
	I.A.4.c. 15-Mile Reach.									
	I.A.4.c.(1) Instream flow water right secured - 581 cfs (July - September).		Complete	On September 2, 1997, instream flow water rights were decreed for 581 and 300 cfs to benefit endangered fishes in the 15-Mile Reach. These water rights have a priority date of the date file which is December 1992 and December 194 respectively.						
	I.A.4.c.(2) Irrigation season return flows legally protected - 300 cfs.		Complete							
	I.A.5. Provide and legally protect instream flows pursuant to Colorado River PBO.									
>*	I.A.5.a. Pursuant to Ruedi Biological Opinion, deliver 5,000af annually & an additional 5,000af 4 out of 5 years (ongoing and protect by short-term agreement).	BR/CWCB	Ongoing	X	X	X	X	X	X	X
>*	I.A.5.b. Execute long-term lease for 10,825 af from Ruedi Reservoir.	BR/FWS/CWCB	Complete	2012 lease signed June 23, 2003.						
>*	I.A.5.b.(1) Provide water annually pursuant to long-term lease.	BR/CWCB		X	X	X	X	X	X	X
	I.A.5.c. Execute 10-year agreement for delivery of 5,412.5 af by West Slope water users.	CRWCD/FWS	Complete	Pursuant to the 1999 PBO, in 2000, the Service signed a 10-year agreement with the CRWCD for delivery of 5,412 acre-feet of West Slope water from Wolford Mountain Reservoir (in addition to the original commitment of 6,000 acre-feet).						
>*	I.A.5.c.(1) Provide and protect water deliveries by West Slope water users.	CRWCD/CWCB	Ongoing	X	X	X	X	X	X	X
	I.A.5.d. Execute 10-year agreement for delivery of 5,412.5 af by East Slope water users.	DWD/FWS	Complete	Pursuant to the 1999 PBO, in 2000, the Service signed a 10-year agreement with Denver Water to deliver of 5,412 acre-feet of East Slope water from Williams Fork Reservoir.						
>*	I.A.5.d.(1) Provide and protect water deliveries by East Slope water users.	DWD/CWCB	Ongoing	X	X	X	X	X	X	X
	I.A.5.e. Permanent delivery of 10,825 af of water in late summer/early fall to meet base flow needs.									
	I.A.5.e.(1) Identify options.	CRWCD/NWCD/Denver Water		X						

COLORADO RIVER ACTION PLAN: MAINSTEM

36

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COLORADO RIVER ACTION PLAN: MAINSTEM

37

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COLORADO RIVER ACTION PLAN: MAINSTEM

38

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>*	II.A.3.c.	Construct.	BR	Complete	75 cfs inlet control structure to flush selenium was completed December 1996 (Hamilton et al. 2003).						
>*	II.A.3.d.	Operate and maintain.	BR/FWS/ CDOW	TBD, revisit as needed	Floodplain acquisition completed and operation, maintenance and evaluation of sites incorporated into Colorado River Subbasin Floodplain Management Plan (Valdez and Nelson 2004b) (IIA6).						
	II.A.3.e.	Monitor and evaluate success; modify as needed.	FWS-FR	TBD, revisit as needed	Hamilton et al. 1996, 1997, 2003, Scheer 1998.						
	II.A.4.	Develop and implement levee removal strategy at high-priority sites.									
	II.A.4.a.	Preconstruction (contaminants screening, floodability assessments, environmental compliance, design & engineering.	BR/FWS	Complete	Burdick 2002. Levees breached at two sites (19.5 acres total). Levee removal completed and operation, maintenance and evaluation of sites incorporated into Colorado River Subbasin Floodplain Management Plan (Valdez and Nelson 2004b) (IIA6).						
>*	II.A.4.b.	Construction (levee breaching) [NOTE: Subject to review and approval for depression wetlands.]	BR	Complete							
>*	II.A.4.c.	Operate and maintain.	BR/FWS	Complete							
	II.A.4.d.	Evaluation	FWS	Complete							
	II.A.5.	Acquire interest in high-priority flooded bottomland habitats.									
	II.A.5.a.	Identify and evaluate sites.	FWS	Complete	Acquired 10 sites (394 acres total). Floodplain acquisition completed and operation, maintenance and evaluation of sites incorporated into Colorado River Subbasin Floodplain Management Plan (Valdez and Nelson 2004b) (IIA6).						
	II.A.5.b.	Pre-acquisition planning and identification of acquisition options.	PD	Complete							
	II.A.5.c.	Conduct appraisal/NEPA compliance.	PD	Complete							
>*	II.A.5.d.	Negotiate and acquire.	PD	Complete							
	II.A.5.e.	Evaluate effectiveness of land acquisition activities and provide recommendations	PD	Complete							
>*	II.A.6.	Develop and implement Colorado River Subbasin Floodplain Management Plan (Valdez and Nelson 2004b).	Program	Ongoing	X	X	X	X	X	X	X
	II.B.	Restore native fish passage at instream barriers.									
	II.B.1.	Restore passage at Grand Valley Irrigation Co. Diversion Dam (Palisade)									
	II.B.1.a.	Evaluate and implement viable options to restore fish passage.	BR/FWS	Complete	1997						
	II.B.1.a.(1)	Obtain landowner consent/agreement.	BR	Complete	Preconstruction activities complete 1997.						
	II.B.1.a.(2)	Site design/environmental compliance.	BR	Complete	Preconstruction activities complete 1997.						
>*	II.B.1.a.(3)	Construct.	BR	Complete	GVIC passage construction completed in 01/98.						
>*	II.B.1.a.(4)	Operate and maintain.	FWS-FR/BR	Ongoing	X	X	X	X	X	X	X
	II.B.1.a.(5)	Monitor and evaluate success.	FWS-FR/BR	Complete	Burdick 1999.						
	II.B.1.b.	Screen GVIC diversion to prevent endangered fish entrainment, if warranted.									
	II.B.1.b.(1)	Design.	BR	Complete	1999						
>*	II.B.1.b.(2)	Construct.	BR	Complete	GVIC diversion canal fish screen completed in 05/02, modifications to be completed March 2004.						
>*	II.B.1.b(3)	Operate and maintain.	FWS-FR/BR	Ongoing	X	X	X	X	X	X	X
	II.B.2.	Restore fish passage at Price Stubb.									
	II.B.2.a.	Evaluate and implement viable options.									
	II.B.2.a.(1)	Obtain landowner consent/agreement.	BR		X						
	II.B.2.a.(2)	Site design/environmental compliance.	BR		X						
>*	II.B.2.a.(3)	Construct.	BR		X	X	4/06				
>*	II.B.2.a.(4)	Operate and maintain.	TBD			X	X	X	X	X	X
	II.B.2.a.(5)	Monitor and evaluate success (if dam removed, no biological evaluation will be needed).	FWS-FR/BR			X					
	II.B.3.	Restore fish passage at Government Highline (Roller Dam).									
	II.B.3.a.	Evaluate and implement viable options.									
	II.B.3.a.(1)	Site design/environmental compliance.	BR	Complete	2003						
>*	II.B.3.a.(2)	Construct.	BR		8/04						
>*	II.B.3.a.(3)	Operate and maintain.	BR			X	X	X	X	X	X
	II.B.3.a.(4)	Monitor and evaluate success.	FWS-FR/BR			X	X				
	II.B.3.b.	Screen Government Highline diversion to prevent endangered fish entrainment									
	II.B.3.b.(1)	Design.	BR	Complete	2002						
>*	II.B.3.b.(2)	Construct.	BR		X	03/05					
	II.B.3.b.(3)	Evaluate screening.	FWS-FR/BR			X	X				
	II.C.	Support actions to reduce or eliminate contaminant impacts. [NOTE: Contaminants remediation (in all reaches) will be conducted independently of and funded outside of the Recovery Program.]									
	II.C.1.	Support actions to reduce or eliminate contaminant impacts of selenium in the Grand Valley.	FWS-ES	Ongoing	X	X	X	X	X	X	X
	II.C.2.	Support remediation of groundwater contamination at the Atlas Mill tailings site.	FWS-ES	Ongoing	X	X	X	X	X	X	X

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	II.C.3.	Identify measures to minimize risk of hazardous materials spills in Black Rocks and Westwater Canyon from transport along the adjacent railway to protect humpback chub populations.	FWS-ES	Ongoing	X	X	X	X	X	X	X
	III.	REDUCE NEGATIVE IMPACTS OF NONNATIVE FISHES AND SPORTFISH MANAGEMENT ACTIVITIES (NONNATIVE AND SPORTFISH MANAGEMENT)									
	III.A.	Develop and implement control programs in reaches of the Colorado River occupied by endangered fishes. Each control activity will be evaluated for effectiveness and then continued as needed.									
	III.A.1.	Determine relationship between Aspinall test flows and nonnative fish abundance.	UDWR/ FWS-FR	Complete	McAda & Ryel 1999.						
>*	III.A.2.	Reclaim ponds in critical habitat.	CDOW	Complete	Martinez 2004.						
	III.A.2.a.	Evaluate and make recommendations.	CDOW	Complete							
	III.A.3.	Nonnative cyprinids and centrarchids in nursery habitats.									
	III.A.3.a.	Remove small nonnative cyprinids from backwaters and other low velocity habitats.	CDOW/UDWR	Complete	Trammell et al. 2002.						
	III.A.3.b.	Remove nonnative centrarchids from backwaters and other low velocity habitats.	FWS	Complete	Osmundson 2003.						
	III.A.4.	Preclude escapement from ponds in critical habitat as needed and feasible.									
	III.A.4.a.	Evaluate sources of nonnative fishes and make recommendations.	CDOW/FWS		X	X					
>*	III.A.5.	Develop and implement program to identify required level of channel catfish control.	FWS	On hold	Smallmouth bass considered higher priority (2004).						
>*	III.A.6.	Develop and implement program to identify required level of smallmouth bass control.	FWS		X	X	X				
	III.B.	Reduce negative impacts to endangered fishes from sportfish management activities.									
>*	III.B.1.	Evaluate control options and implement measures to control nonnative fish escapement from Highline Reservoir.	CDOW/ CRWCD	Complete	Fish barrier net installed in Highline Reservoir 8/99.						
	III.B.1.a.	Operate and maintain Highline Reservoir net.	CDOPR	Ongoing	X	X	X	X	X	X	X
	III.B.1.b.	Evaluate Highline Reservoir net.	CDOW	Complete	Martinez 2002.						
	III.B.2.	Remove bag and possession limits on warmwater nonnative sportfishes within critical habitat in Colorado.	CDOW	Complete	See Colorado fishing regulations.						
	III.B.4.	Develop basinwide aquatic management plan to reduce nonnative fish impacts while providing sportfishing opportunities. Draft: CDOW 2002.	CDOW		X						
>*	III.B.4.a.	Implement CDOW's Colorado River Aquatic Management Plan.	CDOW	Ongoing	X	X	X	X	X	X	X
	IV.	MANAGE GENETIC INTEGRITY AND AUGMENT OR RESTORE POPULATIONS (STOCKING ENDANGERED FISHES)									
	IV.A.	Augment or restore populations as needed, and as guided by the Genetics Management Plan.									
	IV.A.1.	Razorback sucker.									
	IV.A.1.a.	Develop experimental augmentation plan and seek Program acceptance.	FWS-FR	Complete	Burdick et al. 1995.						
	IV.A.1.b.	Implement experimental augmentation plan.									
>	IV.A.1.b.(1)	Stock fish.	FWS-FR	Complete	Burdick 2003.						
	IV.A.1.b.(2)	Monitor and evaluate results; make recommendations regarding further augmentation.	FWS-FR	Complete	Burdick 2003.						
	IV.A.2.	Monitor the fish community in the upper Colorado River (above Palisade) and develop management action plan, including recommendations for Colorado pikeminnow and razorback sucker augmentation.	CDOW	Complete	Anderson 1997.						
	IV.A.3.	Develop State stocking plan for razorbacks in the Colorado River in Colorado.	CDOW/PD	Complete	Nesler et al. 2003.						
	IV.A.3.a.	Program acceptance.	CDOW/PD	Complete	Nesler et al. 2003.						
>	IV.A.3.b.	Implement razorback sucker State stocking plan.	CDOW/PD	Ongoing	X	X	X	X	X	X	X
	IV.A.3.b.	Evaluate stocking success as identified in monitoring plan for stocked fish.	Program	Ongoing	X	X	X	X	X	X	X
	IV.A.4.	Develop State stocking plan for Colorado pikeminnow in the Colorado River in Colorado.	CDOW/PD	Complete	Nesler et al. 2003.						
	IV.A.4.a.	Program acceptance.	CDOW/PD	Complete	Nesler et al. 2003.						
>	IV.A.4.b.	Implement Colorado pikeminnow State stocking plan.	CDOW/PD	Ongoing	X	X	X	X	X	X	X
	IV.A.4.c.	Evaluate stocking success as identified in monitoring plan for stocked fish.	Program	Ongoing	X	X	X	X	X	X	X
	IV.A.5.	Develop State stocking plan for bonytail in the Colorado River from Palisade to Loma.	CDOW	Complete	Nesler et al. 2003.						
	IV.A.5.a.	Program acceptance.	CDOW/PD	Complete	Nesler et al. 2003.						
>	IV.A.5.b.	Implement bonytail State stocking plan.	FWS/CDOW	Ongoing	X	X	X	X	X	X	X
	IV.A.5.c.	Evaluate stocking success as identified in monitoring plan for stocked fish.	Program	Ongoing	X	X	X	X	X	X	X
	IV.A.6.	Develop State stocking plan for the four endangered fish in the Colorado River in Utah.									
	IV.A.6.a.	Prepare plan.	UDWR	Complete	Nesler et al. 2003.						
	IV.A.6.b.	Program acceptance.	UDWR	Complete	Nesler et al. 2003.						

COLORADO RIVER ACTION PLAN: MAINSTEM

40

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>	IV.A.6.c. Implement plan.	UDWR	Ongoing	X	X	X	X	X	X	X
	IV.A.6.d. Evaluate stocking success as identified in monitoring plan for stocked fish.	UDWR		X	X	X	X	X	X	X
V.	MONITOR POPULATIONS AND HABITAT AND CONDUCT RESEARCH TO SUPPORT RECOVERY ACTIONS (RESEARCH, MONITORING, AND DATA MANAGEMENT)									
V.A.	Conduct research to acquire life history information and enhance scientific techniques required to complete recovery actions.									
V.A.1.	Determine Colorado pikeminnow larval drift into Lake Powell.	NPS	Complete	Muth and Wick 1996, 1997.						
V.B.	Monitor populations per requirements in the 15-Mile Reach PBO.									
V.B.1.	Determine initial baselines and indices for Colorado pikeminnow and humpback chub.	PD	Complete	Appendix to biological opinion (USFWS 1999a).						
V.B.1.a.	Evaluate population response, per 15-Mile Reach PBO (every 5 years beginning in FY 05).	FWS			X					X
V.B.2.	Determine initial baselines and indices for razorback sucker and bonytail.	PD			X					
V.B.2.a.	Evaluate population response, per 15-Mile Reach PBO (every 5 years beginning in FY 05).	FWS			X					X
V.B.3.	Revise population indices to conform to recovery goals.	FWS	Complete	2003 PBO evaluation (in concert with 2003 RIPRAP assessment).						
V.B.4.	Monitor incidental take.									
V.B.4.a.	Develop plan to monitor incidental take of endangered fishes in diversion structures.	FWS	Complete	"Plan" completed in that fish are being retrieved from canals until the canals are screened and screens are fully functional (anticipated in FY 05). Screens will prevent entrainment of adult, subadult, and juvenile fish (preventing entrainment of adult and subadult fish required is by recovery goals) because they are 3/32 mesh.						
V.B.4.b.	Implement plan to monitor incidental take of endangered fish in diversion structures.	FWS	Ongoing	X	X					
V.C.	Estimate humpback chub populations									
V.C.1.	Black Rocks	FWS		X			X	X	X	X
V.C.2.	Westwater	UDWR		X			X	X	X	X
V.C.3.	Cataract Canyon	UDWR/Valdez		X	X		X	X	X	X
V.D.	Estimate pikeminnow populations in the upper Colorado River (including Gunnison River).	FWS		X	X			X	X	X